

Effects of interruption of apicoplast function on malaria infection, development, and transmission.

Sullivan M; Li J; Kumar S; Rogers M J; McCutchan T F
Growth and Development Section, Laboratory of Parasitic Diseases,
National Institute of Allergy and Infectious Diseases, National Institutes
of Health, Bethesda, MD 20892-0425, USA.

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Subfile: INDEX MEDICUS

A chloroplast-like organelle is present in many species of the Apicomplexa phylum. We have previously demonstrated that the **plastid** organelle of *Plasmodium falciparum* is essential to the survival of the blood-stage malaria parasite in culture. One known function of the **plastid** organelle in another Apicomplexan, *Toxoplasma gondii*, involves the formation of the parasitophorous vacuole. The effects of interruption of **plastid** function on sporozoites and sexual-stage parasites have not been investigated. In our previous studies of the effects of thiostrepton, a polypeptide antibiotic from streptococcus spp., on erythrocytic schizogony of the human malaria *P. falciparum*, we found that this antibiotic appears to interact with the guanosine triphosphatase (GTPase) binding domain of the organellar large subunit ribosomal RNA, as it does in bacteria. We investigate here the effects of this drug on life-cycle stages of the malaria parasite in vivo. Preincubation of mature infective sporozoites with thiostrepton has no observable effect on their infectivity. Sporozoite infection both by mosquito bite and sporozoite injection was prevented by pretreatment of mice with thiostrepton. Thiostrepton eliminates infection with erythrocytic forms of *Plasmodium berghei* in mice. Clearance of infected red blood cells follows the delayed kinetics associated with drugs that interact with the apicoplast. Thiostrepton treatment of infected mice reduces transmission of parasites by more than ten-fold, indicating that the **plastid** has a role in sexual development of the parasite. These results indicate that the **plastid** function is accessible to drug action in vivo and important to the development of both sexual and asexual forms of the parasite.

Tags: Animal; Female

Descriptors: Antibiotics, Peptide--therapeutic use--TU; *Antimalarials
--therapeutic use--TU; *Malaria--drug therapy--DT; * *Plasmodium berghei*
--drug effects--DE; *Thiostrepton--therapeutic use--TU; Culicidae
--parasitology--PS; Disease Vectors; Dose-Response Relationship, Drug;
Malaria--parasitology--PS; Malaria--transmission--TM; Mice; Mice, Inbred
BALB C; *Plasmodium berghei* --pathogenicity--PY; Time Factors

CAS Registry No.: 0 (Antibiotics, Peptide); 0 (Antimalarials);
1393-48-2 (Thiostrepton)

Record Date Created: 20001205

3/9/2

DIALOG(R) File 155:MEDLINE(R)

09617788 98038979 PMID: 9373142

Partial nucleotide sequence and organisation of extrachromosomal plastid-like DNA in *Plasmodium berghei*.

Yap M W; Kara U A; ten Heggeler-Bordier B; Ting R C; Tan T M

Molecular Parasitology Laboratory, School of Biological Sciences,
Singapore, Singapore.

Gene (NETHERLANDS) Oct 24 1997, 200 (1-2) p91-8, ISSN 0378-1119
Journal Code: 7706761

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The murine malaria parasite *Plasmodium berghei* contains a **plastid**-like extrachromosomal genome. This genome is 30.7 kb in size and is transcriptionally active as shown by RT-PCR. DNA sequence analysis of the

genome reveals 69.9-95.5% homology to sequences of the 35-kb extrachromosomal circle found in the human malaria species *Plasmodium falciparum*. Homologous sequences include regions of genes for the ssu-rRNA, lsu-rRNA, rpo B and clusters of t-RNAs. Sequence variation between the two *Plasmodium* species exists in the non-coding interspersing regions. A physical map has been constructed for the *P. berghei* circle, indicating the EcoRI and HindIII restriction sites as well as the arrangement of the rRNA, rpo B and tRNA genes. Arrangement of these genes is similar to that found on the *P. falciparum* 35-kb circle. The *P. berghei* circular element is distinct from the mitochondrial-6-kb DNA of both the murine and the human *Plasmodium* species. Preliminary results indicate that the circle may be a useful target for drug therapy.

Tags: Animal; Human; Support, Non-U.S. Gov't

Descriptors: DNA, Protozoan--chemistry--CH; * *Plasmodium berghei* --genetics--GE; Base Sequence; DNA, Mitochondrial--chemistry--CH; DNA, Mitochondrial--genetics--GE; DNA, Protozoan--genetics--GE; DNA, Protozoan --ultrastructure--UL; Mice; *Plasmodium falciparum*--genetics--GE; Plastids --ultrastructure--UL; Polymerase Chain Reaction; RNA, Protozoan --biosynthesis--BI; Restriction Mapping; Sequence Homology, Nucleic Acid; Variation (Genetics)

Molecular Sequence Databank No.: GENBANK/U79729; GENBANK/U79730; GENBANK/U79731; GENBANK/U79732

CAS Registry No.: 0 (DNA, Mitochondrial); 0 (DNA, Protozoan); 0 (RNA, Protozoan)

Record Date Created: 19971209

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Day : Monday
Date: 8/12/2002

 **PALM INTRANET**

Time: 11:44:43

Biotech Query for 09/369992

Title: **DIAGNOSIS OF PARASITES**

Inventor: **KARA, ANNA KATE URSULA**

Location: **16E1/TC 1600 SPE OF GAU ASSIGNED**

Location Date: **08/12/2002**

Group Art Unit: **1645**

Status: **30/DOCKETED NEW CASE - READY FOR EXAMINATION**

Num	Date	Code	Contents Description
40	05/29/2002	CRFE	CRF IS GOOD TECHNICALLY / ENTERED INTO DATABASE
35	02/20/2002	CRFE	CRF IS GOOD TECHNICALLY / ENTERED INTO DATABASE
26	06/11/2001	CRFD	CRF IS FLAWED TECHNICALLY / NOT ENTERED INTO DATABASE
16	03/23/2001	CRFD	CRF IS FLAWED TECHNICALLY / NOT ENTERED INTO DATABASE

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WEST Search History

DATE: Monday, August 12, 2002

<u>Set Name</u>	<u>Query</u>	<u>Hit Count</u>	<u>Set Name</u>
side by side			result set
<i>DB=USPT; PLUR=YES; OP=AND</i>			
L1	plastid\$	761	L1
L2	berghei	343	L2
L3	L2 an dl1	0	L3
L4	L2 and l1	0	L4
L5	L1 and plasmod\$	16	L5

END OF SEARCH HISTORY

WEST

Generate Collection

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L5: Entry 7 of 16

File: USPT

DOCUMENT-IDENTIFIER: US 6242584 B1

TITLE: Method for identifying mycobacterial species by comparative sequence analysis of rpoB gene

Brief Summary Text (19):

In addition, a rpoB gene is used for phylogenetic establishment of Archaeobacteria(see: Puhler, G., H. Leffers, F. Gropp, P. Palm, H. P. Klenk, F. Lottspeich, R. A. Garrett and W. Zillig, Archaeobacterial DNA-dependent RNA Polymerases Testify to the Evolution of the Eukaryotic Nuclear Genome, Proc. Natl. Acad. Sci., U.S.A., 86:4569-4573(1989); Iwabe N., K. Kuma, H. Kishino, M. Hasegawa, and Miyata, Evolution of RNA Polymerases and Branching Patterns of the Three Major Groups of Archaeobacteria, J. Mol. Evol., 32:70-78(1991); Klenk, H. P. and W. Zillig, DNA-dependent RNA Polymerase Subunit B as a Tool for Phylogenetic Reconstructions: Branching Topology of the Archaeal Domain, J. Mol. Evol., 38:420-432(1994); Zillig, W., H. P. Klenk, P. Palm, G. Puhler, F. Gropp, R. A. Garrett and H. Leffers, The Phylogenetic Relations of DNA-dependent RNA Polymerases of Archaeobacteria, Eukaryotes, and Eubacteria, Can. J. Microbiol., 35:73-80(1989)), Eubacteria other than Staphylococcus aureus (see: Rowland G. C., M. Aboshkiwa and G. Coleman, Comparative Sequence Analysis and Predicted Phylogeny of the DNA-dependent RNA Polymerase Beta Subunits of Staphylococcus aureus and other Eubacteria, Biochem. Soc. Trans., 21:405(1993)) and Plasmodium (see: Gardner, M. J., N. Goldman, P. Barnett, P. W. Moore, K. Rangachari, M. Strath, A. Whyte, D. H. Williamson and R. J. Wilson, Phylogenetic Analysis of the rpoB Gene from the Plastid-like DNA of Plasmodium falciparum, Mol. Biochem. Parasitol., 66:221-231(1994)).

Previous sets have been retained; enter DISPLAY SETS to view them.

?repeat

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S1  32650  PLASTID?
      2336  PLASMODIUM BERGHEI
      26   PLASMODIUM BERGHEI --ANALYSIS --AN
      1   PLASMODIUM BERGHEI --ANATOMY AND HISTOLOGY --A
      15   PLASMODIUM BERGHEI --CHEMISTRY --CH
      16   PLASMODIUM BERGHEI --CLASSIFICATION --CL
      56   PLASMODIUM BERGHEI --CYTOLOGY --CY
      464  PLASMODIUM BERGHEI --DRUG EFFECTS --DE
      99   PLASMODIUM BERGHEI --ENZYMولوجY --EN
      173  PLASMODIUM BERGHEI --GENETICS --GE
      299  PLASMODIUM BERGHEI --GROWTH AND DEVELOPMENT --
      571  PLASMODIUM BERGHEI --IMMUNOLOGY --IM
      113  PLASMODIUM BERGHEI --ISOLATION AND PURIFICATIO
      116  PLASMODIUM BERGHEI --METABOLISM --ME
      1   PLASMODIUM BERGHEI --MICROBIOLOGY --MI
      5   PLASMODIUM BERGHEI --PARASITOLOGY --PS
      105  PLASMODIUM BERGHEI --PATHOGENICITY --PY
      143  PLASMODIUM BERGHEI --PHYSIOLOGY --PH
      38   PLASMODIUM BERGHEI --RADIATION EFFECTS --RE
      92   PLASMODIUM BERGHEI --ULTRASTRUCTURE --UL
      1   PLASMODIUM BERGHEI --VIROLOGY --VI
      1   PLASMODIUM BERGHEI RETICULOCYTE RECEPTOR
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S2 2337 E3-E23

32650 S1

2337 S2

S3 2 S1 AND S2

?e plasmodium berghei

Ref	Items	RT	Index-term
E1	1		PLASMODIUM BELTRANI (SPOROZOA)
E2	2		PLASMODIUM BERGHEI (SPOROZOA)
E3	9997	11	*PLASMODIUM BERGHEI
E4	739		PLASMODIUM BERGHEI (SPOROZOA)
E5	27		PLASMODIUM BERGHEI --ANALYSIS --AN
E6	1		PLASMODIUM BERGHEI --ANATOMY AND HISTOLOGY --A
E7	16		PLASMODIUM BERGHEI --CHEMISTRY --CH
E8	16		PLASMODIUM BERGHEI --CLASSIFICATION --CL
E9	58		PLASMODIUM BERGHEI --CYTOLOGY --CY
E10	633		PLASMODIUM BERGHEI --DRUG EFFECTS --DE
E11	106		PLASMODIUM BERGHEI --ENZYMولوجY --EN
E12	185		PLASMODIUM BERGHEI --GENETICS --GE

Enter P or PAGE for more

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Ref	Items	Index-term
E13	358	PLASMODIUM BERGHEI --GROWTH AND DEVELOPMENT --
E14	691	PLASMODIUM BERGHEI --IMMUNOLOGY --IM
E15	133	PLASMODIUM BERGHEI --ISOLATION AND PURIFICATIO
E16	137	PLASMODIUM BERGHEI --METABOLISM --ME
E17	1	PLASMODIUM BERGHEI --MICROBIOLOGY --MI
E18	7	PLASMODIUM BERGHEI --PARASITOLOGY --PS
E19	122	PLASMODIUM BERGHEI --PATHOGENICITY --PY
E20	166	PLASMODIUM BERGHEI --PHYSIOLOGY --PH
E21	56	PLASMODIUM BERGHEI --RADIATION EFFECTS --RE
E22	99	PLASMODIUM BERGHEI --ULTRASTRUCTURE --UL
E23	1	PLASMODIUM BERGHEI --VIROLOGY --VI
E24	1	PLASMODIUM BERGHEI AND TOXOPLASMA GONDII

Enter P or PAGE for more

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Ref	Items	Index-term
E25	17	PLASMODIUM BERGHEI ANKA
E26	1	PLASMODIUM BERGHEI ANKA (SPOROZOA)
E27	1	PLASMODIUM BERGHEI ANKA INFECTION
E28	1	PLASMODIUM BERGHEI ANKA STRAIN

E29 2 PLASMODIUM BERGHEI ANKA STRAIN OF MALARIA
 E30 4 PLASMODIUM BERGHEI ANTIGEN
 E31 3 PLASMODIUM BERGHEI ANTISERUM
 E32 31 PLASMODIUM BERGHEI BERGHEI
 E33 5 PLASMODIUM BERGHEI BERGHEI (SPOROZOA)
 E34 1 PLASMODIUM BERGHEI CIRCUMSPOROZOITE PEPTIDE
 E35 2 PLASMODIUM BERGHEI CIRCUMSPOROZOITE PEPTIDE DE
 E36 1 PLASMODIUM BERGHEI CIRCUMSPOROZOITE PEPTIDE 25

Enter P or PAGE for more

?s e3-e36

9997 PLASMODIUM BERGHEI
 739 PLASMODIUM BERGHEI (SPOROZOA)
 27 PLASMODIUM BERGHEI --ANALYSIS --AN
 1 PLASMODIUM BERGHEI --ANATOMY AND HISTOLOGY --A
 16 PLASMODIUM BERGHEI --CHEMISTRY --CH
 16 PLASMODIUM BERGHEI --CLASSIFICATION --CL
 58 PLASMODIUM BERGHEI --CYTOLOGY --CY
 633 PLASMODIUM BERGHEI --DRUG EFFECTS --DE
 106 PLASMODIUM BERGHEI --ENZYMOLGY --EN
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 133 PLASMODIUM BERGHEI --ISOLATION AND PURIFICATIO
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 7 PLASMODIUM BERGHEI --PARASITOLOGY --PS
 122 PLASMODIUM BERGHEI --PATHOGENICITY --PY
 166 PLASMODIUM BERGHEI --PHYSIOLOGY --PH
 56 PLASMODIUM BERGHEI --RADIATION EFFECTS --RE
 99 PLASMODIUM BERGHEI --ULTRASTRUCTURE --UL
 1 PLASMODIUM BERGHEI --VIROLOGY --VI
 1 PLASMODIUM BERGHEI AND TOXOPLASMA GONDII
 17 PLASMODIUM BERGHEI ANKA
 1 PLASMODIUM BERGHEI ANKA (SPOROZOA)
 1 PLASMODIUM BERGHEI ANKA INFECTION
 1 PLASMODIUM BERGHEI ANKA STRAIN
 2 PLASMODIUM BERGHEI ANKA STRAIN OF MALARIA
 4 PLASMODIUM BERGHEI ANTIGEN
 3 PLASMODIUM BERGHEI ANTISERUM
 31 PLASMODIUM BERGHEI BERGHEI
 5 PLASMODIUM BERGHEI BERGHEI (SPOROZOA)
 1 PLASMODIUM BERGHEI CIRCUMSPOROZOITE PEPTIDE
 2 PLASMODIUM BERGHEI CIRCUMSPOROZOITE PEPTIDE DE
 1 PLASMODIUM BERGHEI CIRCUMSPOROZOITE PEPTIDE 25

S4 10793 E3-E36

?p

Ref	Items	Index-term
E37	2	PLASMODIUM BERGHEI CIRCUMSPOROZOITE PROTEIN
E38	1	PLASMODIUM BERGHEI CIRCUMSPOROZOITE PROTEIN PE
E39	1	PLASMODIUM BERGHEI CIRCUMSPOROZOITE PROTEIN 24
E40	1	PLASMODIUM BERGHEI CS GENE (PLASMODIUM BERGHEI
E41	1	PLASMODIUM BERGHEI CS GENE (SPOROZOA)
E42	1	PLASMODIUM BERGHEI CS PROTEIN
E43	1	PLASMODIUM BERGHEI CSP GENE (SPOROZOA)
E44	1	PLASMODIUM BERGHEI CTRP GENE (SPOROZOA)
E45	1	PLASMODIUM BERGHEI CTRP GENE CIRCUMSPOROZOITE-
E46	1	PLASMODIUM BERGHEI CYTOCHROME B GENE (SPOROZOA
E47	1	PLASMODIUM BERGHEI EFFECT
E48	1	PLASMODIUM BERGHEI GGCS GENE PLASMODIUM BERGHE

Enter P or PAGE for more

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Ref	Items	Index-term
E49	1	PLASMODIUM BERGHEI G6PD GENE (PLASMODIUM BERGH
E50	1	PLASMODIUM BERGHEI IN RAT

?s e37-e50

	2	PLASMODIUM BERGHEI CIRCUMSPOROZOITE PROTEIN
	1	PLASMODIUM BERGHEI CIRCUMSPOROZOITE PROTEIN PE
	1	PLASMODIUM BERGHEI CIRCUMSPOROZOITE PROTEIN 24
	1	PLASMODIUM BERGHEI CS GENE (PLASMODIUM BERGHEI
	1	PLASMODIUM BERGHEI CS GENE (SPOROZOA)
	1	PLASMODIUM BERGHEI CS PROTEIN
	1	PLASMODIUM BERGHEI CSP GENE (SPOROZOA)
	1	PLASMODIUM BERGHEI CTRP GENE (SPOROZOA)
	1	PLASMODIUM BERGHEI CTRP GENE CIRCUMSPOROZOITE-
	1	PLASMODIUM BERGHEI CYTOCHROME B GENE (SPOROZOA
	1	PLASMODIUM BERGHEI EFFECT
	1	PLASMODIUM BERGHEI GGCS GENE PLASMODIUM BERGHE
	1	PLASMODIUM BERGHEI G6PD GENE (PLASMODIUM BERGH
	1	PLASMODIUM BERGHEI IN RAT
S5	15	E37-E50

?p

Ref	Items	RT	Index-term
E1	1		PLASMODIUM BERGHEI IN RAT
E2	1		PLASMODIUM BERGHEI IN VITRO
E3	1		PLASMODIUM BERGHEI IN VIVO
E4	1		PLASMODIUM BERGHEI INDUCED (SPOROZOA)
E5	1		PLASMODIUM BERGHEI INDUCED STRESS ORGAN INJURY
E6	18	1	PLASMODIUM BERGHEI INFECTION
E7	2		PLASMODIUM BERGHEI INFECTION (SPOROZOA)
E8	1		PLASMODIUM BERGHEI INFECTION EXP
E9	2		PLASMODIUM BERGHEI K173
E10	2		PLASMODIUM BERGHEI LIPID PEROXIDATION
E11	1		PLASMODIUM BERGHEI MAEBL GENE (SPOROZOA)
E12	1		PLASMODIUM BERGHEI MALARIA

Enter P or PAGE for more

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Ref	Items	Index-term
E13	1	PLASMODIUM BERGHEI MALARIA PARASITE (SPOROZOA)
E14	1	PLASMODIUM BERGHEI MODEL
E15	2	PLASMODIUM BERGHEI NIGERIENSIS
E16	2	PLASMODIUM BERGHEI NK65
E17	1	PLASMODIUM BERGHEI PBCSP GENE (SPOROZOA)
E18	1	PLASMODIUM BERGHEI PBDHFR-TS GENE (PLASMODIUM
E19	1	PLASMODIUM BERGHEI PBMDR1 GENE (PLASMODIUM BER
E20	1	PLASMODIUM BERGHEI RETICULOCYTE RECEPTOR
E21	1	PLASMODIUM BERGHEI RRNA GENE (SPOROZOA)
E22	1	PLASMODIUM BERGHEI SCHIZONT-INFECTED CELLS
E23	1	PLASMODIUM BERGHEI SEDIMENTS
E24	1	PLASMODIUM BERGHEI SPECIFIC (SPOROZOA)

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Ref	Items	RT	Index-term
E25	1		PLASMODIUM BERGHEI SPOROZOITE-CARBOHYDRATE MOL
E26	1		PLASMODIUM BERGHEI TRAP GENE (PLASMODIUM BERGH
E27	1		PLASMODIUM BERGHEI TRAP GENE (SPOROZOA)
E28	1		PLASMODIUM BERGHEI TRAP GENE THROMBOSPODIN-REL
E29	1		PLASMODIUM BERGHEI VOELII
E30	1		PLASMODIUM BERGHEI VON WILLEBRAND FACTOR A DOM
E31	1		PLASMODIUM BERGHEI YOELI
E32	1		PLASMODIUM BERGHEI YOELI (SPOROZOA)
E33	463	1	PLASMODIUM BERGHEI YOELII
E34	1		PLASMODIUM BERGHEI YOELII (SPOROZOA)
E35	3		PLASMODIUM BERGHEI)
E36	5		PLASMODIUM BERGHEI-INFECTED ERYTHROCYTES

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Ref	Items	Index-term
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E37 1 PLASMODIUM BERGHEI-PASTEUR (SPOROZOA)
 E38 1 PLASMODIUM BERGHEI-SPECIFIC
 E39 1 PLASMODIUM BERGHER (SPOROZOA)
 E40 3 PLASMODIUM BERGHI (SPOROZOA)
 E41 1 PLASMODIUM BERGHI BERGHI (SPOROZOA)
 E42 1 PLASMODIUM BERGHIE (SPOROZOA)
 E43 1 PLASMODIUM BERGHIE INFECTION
 E44 1 PLASMODIUM BERHEI
 E45 2 PLASMODIUM BERHEI (SPOROZOA)
 E46 1 PLASMODIUM BERHGEI (SPOROZOA)
 E47 1 PLASMODIUM BESPHEI YOELII
 E48 1 PLASMODIUM BIVIA (SPOROZOA)

Enter P or PAGE for more

?s e1-e447

>>>"E447" does not exist

>>>Both terms in the range must be of the same type

?s e1-e47

1 PLASMODIUM BERGHEI IN RAT
 1 PLASMODIUM BERGHEI IN VITRO
 1 PLASMODIUM BERGHEI IN VIVO
 1 PLASMODIUM BERGHEI INDUCED (SPOROZOA)
 1 PLASMODIUM BERGHEI INDUCED STRESS ORGAN INJURY
 18 PLASMODIUM BERGHEI INFECTION
 2 PLASMODIUM BERGHEI INFECTION (SPOROZOA)
 1 PLASMODIUM BERGHEI INFECTION EXP
 2 PLASMODIUM BERGHEI K173
 2 PLASMODIUM BERGHEI LIPID PEROXIDATION
 1 PLASMODIUM BERGHEI MAEBL GENE (SPOROZOA)
 1 PLASMODIUM BERGHEI MALARIA
 1 PLASMODIUM BERGHEI MALARIA PARASITE (SPOROZOA)
 1 PLASMODIUM BERGHEI MODEL
 2 PLASMODIUM BERGHEI NIGERIENSIS
 2 PLASMODIUM BERGHEI NK65
 1 PLASMODIUM BERGHEI PBCSP GENE (SPOROZOA)
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 1 PLASMODIUM BERGHEI PBMDR1 GENE (PLASMODIUM BER
 1 PLASMODIUM BERGHEI RETICULOCYTE RECEPTOR
 1 PLASMODIUM BERGHEI RRNA GENE (SPOROZOA)
 1 PLASMODIUM BERGHEI SCHIZONT-INFECTED CELLS
 1 PLASMODIUM BERGHEI SEDIMENTS
 1 PLASMODIUM BERGHEI SPECIFIC (SPOROZOA)
 1 PLASMODIUM BERGHEI SPOROZOITE-CARBOHYDRATE MOL
 1 PLASMODIUM BERGHEI TRAP GENE (PLASMODIUM BERGH
 1 PLASMODIUM BERGHEI TRAP GENE (SPOROZOA)
 1 PLASMODIUM BERGHEI TRAP GENE THROMBOSPODIN-REL
 1 PLASMODIUM BERGHEI YOELII
 1 PLASMODIUM BERGHEI VON WILLEBRAND FACTOR A DOM
 1 PLASMODIUM BERGHEI YOELI
 1 PLASMODIUM BERGHEI YOELI (SPOROZOA)
 463 PLASMODIUM BERGHEI YOELII
 1 PLASMODIUM BERGHEI YOELII (SPOROZOA)
 3 PLASMODIUM BERGHEI)
 5 PLASMODIUM BERGHEI-INFECTED ERYTHROCYTES
 1 PLASMODIUM BERGHEI-PASTEUR (SPOROZOA)
 1 PLASMODIUM BERGHEI-SPECIFIC
 1 PLASMODIUM BERGHER (SPOROZOA)
 3 PLASMODIUM BERGHI (SPOROZOA)
 1 PLASMODIUM BERGHI BERGHI (SPOROZOA)
 1 PLASMODIUM BERGHIE (SPOROZOA)
 1 PLASMODIUM BERGHIE INFECTION
 1 PLASMODIUM BERHEI
 2 PLASMODIUM BERHEI (SPOROZOA)
 1 PLASMODIUM BERHGEI (SPOROZOA)
 1 PLASMODIUM BESPHEI YOELII

S6 537 E1-E47

?e plasmodium berghei

Ref Items RT Index-term

E1	1		PLASMODIUM BELTRANI (SPOROZOA)
E2	2		PLASMODIUM BERGEI (SPOROZOA)
E3	9997	11	*PLASMODIUM BERGHEI
E4	739		PLASMODIUM BERGHEI (SPOROZOA)
E5	27		PLASMODIUM BERGHEI --ANALYSIS --AN
E6	1		PLASMODIUM BERGHEI --ANATOMY AND HISTOLOGY --A
E7	16		PLASMODIUM BERGHEI --CHEMISTRY --CH
E8	16		PLASMODIUM BERGHEI --CLASSIFICATION --CL
E9	58		PLASMODIUM BERGHEI --CYTOLOGY --CY
E10	633		PLASMODIUM BERGHEI --DRUG EFFECTS --DE
E11	106		PLASMODIUM BERGHEI --ENZYMولوجY --EN
E12	185		PLASMODIUM BERGHEI --GENETICS --GE

Enter P or PAGE for more

?e e3

Ref	Items	Type	RT	Index-term
R1	4851		11	*PLASMODIUM BERGHEI
R2	776	B	3	PLASMODIUM
R3	15758			DC=B1.50.70.60
R4	17101	B	15	PLASMODIUM
R5	0	S	1	PLASMODIUM BERGHEI INFECTION
R6	0	S	1	PLASMODIUM BERGHEI YOELII
R7	2848	X		DC=B1.841.75.380.611.461.
R8	25269	B	36	PLASMODIUM

?s r1 or r3 or r7

>>>One or more prefixes are unsupported

>>> or undefined in one or more files.

	4851	PLASMODIUM BERGHEI
	15758	DC=B1.50.70.60
	2848	DC=B1.841.75.380.611.461.
S7	18652	'PLASMODIUM BERGHEI' OR DC='B1.50.70.60' OR
		DC='B1.841.75.380.611.461.'

?ds

Set	Items	Description
S1	32650	PLASTID?
S2	2337	E3-E23
S3	2	S1 AND S2
S4	10793	E3-E36
S5	15	E37-E50
S6	537	E1-E47
S7	18652	'PLASMODIUM BERGHEI' OR DC='B1.50.70.60' OR DC='B1.841.75.-
		380.611.461.'

?s s1 and (s2 or s4 or s5 or s6 or s7)

	32650	S1
	2337	S2
	10793	S4
	15	S5
	537	S6
	18652	S7

S8	68	S1 AND (S2 OR S4 OR S5 OR S6 OR S7)
----	----	-------------------------------------

?s s8 not s3

	68	S8
	2	S3

S9	66	S8 NOT S3
----	----	-----------

?t s9/free/all

YSTEM:OS - DIALOG OneSearch

File 155:MEDLINE(R) 1966-2002/Aug W1

*File 155: Alert feature enhanced for multiple files, duplicates removal, customized scheduling. See HELP ALERT.

File 5:Biosis Previews(R) 1969-2002/Aug W1

(c) 2002 BIOSIS

*File 5: Alert feature enhanced for multiple files, duplicates removal, customized scheduling. See HELP ALERT.

File 34:SciSearch(R) Cited Ref Sci 1990-2002/Aug W2

(c) 2002 Inst for Sci Info

*File 34: Alert feature enhanced for multiple files, duplicates removal, customized scheduling. See HELP ALERT.

File 35:Dissertation Abs Online 1861-2002/Jul

(c) 2002 ProQuest Info&Learning

File 48:SPORTDiscus 1962-2002/Aug

(c) 2002 Sport Information Resource Centre

File 65:Inside Conferences 1993-2002/Aug W2

(c) 2002 BLDSC all rts. reserv.

File 71:ELSEVIER BIOBASE 1994-2002/Aug W1

(c) 2002 Elsevier Science B.V.

File 73:EMBASE 1974-2002/Aug W1

(c) 2002 Elsevier Science B.V.

*File 73: Alert feature enhanced for multiple files, duplicates removal, customized scheduling. See HELP ALERT.

File 77:Conference Papers Index 1973-2002/Jul

(c) 2002 Cambridge Sci Abs

File 91:MANTIS(TM) 1880-2002/Oct

2001 (c) Action Potential

File 94:JICST-EPlus 1985-2002/Jun W3

(c) 2002 Japan Science and Tech Corp(JST)

*File 94: There is no data missing. UDs have been adjusted to reflect the current months data. See Help News94 for details.

File 98:General Sci Abs/Full-Text 1984-2002/Jun

(c) 2002 The HW Wilson Co.

File 135:NewsRx Weekly Reports 1995-2002/Jul W4

(c) 2002 NewsRx

File 144:Pascal 1973-2002/Aug W2

(c) 2002 INIST/CNRS

File 149:TGG Health&Wellness DB(SM) 1976-2002/Aug W1

(c) 2002 The Gale Group

File 156:ToxFile 1965-2002/Aug W1

(c) format only 2002 The Dialog Corporation

*File 156: This file has been reloaded. Accession Numbers have changed.

File 159:Cancerlit 1975-2002/Jun

(c) format only 2002 Dialog Corporation

*File 159: The file has been reloaded. Accession Numbers have changed.

File 162:CAB HEALTH 1983-2002/Jul

(c) 2002 CAB INTERNATIONAL

*File 162: Truncating CC codes is recommended for full retrieval. See Help News162 for details.

File 164:Allied & Complementary Medicine 1984-2002/Jul

(c) 2002 BLHCIS

File 172:EMBASE Alert 2002/Aug W1

(c) 2002 Elsevier Science B.V.

File 266:FEDRIP 2002/Jun

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File 369:New Scientist 1994-2002/Jul W2

(c) 2002 Reed Business Information Ltd.

File 370:Science 1996-1999/Jul W3

(c) 1999 AAAS

*File 370: This file is closed (no updates). Use File 47 for more current information.

File 399:CA SEARCH(R) 1967-2002/UD=13706

(c) 2002 AMERICAN CHEMICAL SOCIETY

*File 399: Use is subject to the terms of your user/customer agreement. Alert feature enhanced for multiple files, etc. See HELP ALERT.

File 434:SciSearch(R) Cited Ref Sci 1974-1989/Dec

(c) 1998 Inst for Sci Info

File 442:AMA Journals 1982-2002/Jul B1

(c)2002 Amer Med Assn -FARS/DARS apply

File 444:New England Journal of Med. 1985-2002/Aug W1

(c) 2002 Mass. Med. Soc.

File 467:ExtraMED(tm) 2000/Dec

(c) 2001 Informania Ltd.

*File 467: For information about updating status please see Help News467.

Set Items Description

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Cost is in DialUnits

?ds

Set	Items	Description
S1	32650	PLASTID?
S2	2337	E3-E23
S3	2	S1 AND S2
S4	10793	E3-E36
S5	15	E37-E50
S6	537	E1-E47
S7	18652	'PLASMODIUM BERGHEI' OR DC='B1.50.70.60' OR DC='B1.841.75.-380.611.461.'
S8	68	S1 AND (S2 OR S4 OR S5 OR S6 OR S7)
S9	66	S8 NOT S3
S10	36	S9/1998:2002
S11	30	S9 NOT S10

?t s11/3,kwic/30

>>>KWIC option is not available in file(s): 77, 399

11/3,KWIC/30 (Item 2 from file: 399)

DIALOG(R)File 399:CA SEARCH(R)

(c) 2002 AMERICAN CHEMICAL SOCIETY. All rts. reserv.

127273369 CA: 127(20)273369q JOURNAL

Direct PCR amplification and sequence analysis of extrachromosomal Plasmodium DNA from dried blood spots

AUTHOR(S): Tan, T. M. C.; Nelson, J. S.; Ng, H. C.; Ting, R. C. Y.; Kara, U. A. K.

LOCATION: Institute of Molecular and Cell Biology, National University of Singapore, 10 Kent Ridge Crescent, S119260, Singapore, Singapore,

JOURNAL: Acta Trop. DATE: 1997 VOLUME: 68 NUMBER: 1 PAGES: 105-114

CODEN: ACTRAQ ISSN: 0001-706X LANGUAGE: English PUBLISHER: Elsevier

?t s9/3,kwic/35-58

>>>KWIC option is not available in file(s): 77, 399

9/3,KWIC/35 (Item 29 from file: 73)

DIALOG(R)File 73:EMBASE

(c) 2002 Elsevier Science B.V. All rts. reserv.

07159001 EMBASE No: 1998048981

Topoisomerase II inhibitors induce cleavage of nuclear and 35-kb plastid DNAs in the malarial parasite Plasmodium falciparum

Weissig V.; Vetro-Widenhouse T.S.; Rowe T.C.

Dr. T.C. Rowe, Dept. of Pharmacology/Therapeutics, University of Florida Coll. of Med., Gainesville, FL 32610-0267 United States

DNA and Cell Biology (DNA CELL BIOL.) (United States) 1997, 16/12 (1483-1492)

CODEN: DCEBE ISSN: 1044-5498

DOCUMENT TYPE: Journal; Article

LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

NUMBER OF REFERENCES: 43

Topoisomerase II inhibitors induce cleavage of nuclear and 35-kb plastid DNAs in the malarial parasite Plasmodium falciparum

...used to investigate the presence of topoisomerase II activities associated with nuclear and 35-kb plastid DNAs of the malarial parasite Plasmodium falciparum. The eukaryotic topoisomerase II inhibitor VP-16 induced...

leg
12/10/02

MEDICAL DESCRIPTORS:

plastid ; heat sensitivity; nonhuman; article; priority journal

EMTREE CODES:

B1.50.70.60 ; G1.550.625.210.220.220; G1.550.625.630.220.220...

9/3,KWIC/36 (Item 30 from file: 73)

DIALOG(R)File 73:EMBASE

(c) 2002 Elsevier Science B.V. All rts. reserv.

07155140 EMBASE No: 1998039682

Malaria and toxoplasma unmasked

McFadden G.I.; Waller R.F.

G.I. McFadden, Plant Cell Biology Research Centre, School of Botany,
University of Melbourne, Melbourne, Vic. Australia

Today's Life Science (TODAY'S LIFE SCI.) (Australia) 1997, 9/12
(24-28)

CODEN: TOLSE ISSN: 1033-6893

DOCUMENT TYPE: Journal; Review

LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

NUMBER OF REFERENCES: 36

Vestigial **plastids** in malarial, toxoplasmodial, and related parasites
have given us a novel insight into the evolutionary...

MEDICAL DESCRIPTORS:

genome; **plastid** ; chloroplast; photosynthesis; alga; traditional medicine;
chinese medicine; human; nonhuman; review

EMTREE CODES:

...680.670.330.230; G1.705.700.220; E2.230; C1.275; E5.715.715;

B1.50.70.60 ; B1.50.70.85; G1.385.350; A11.190.160; G1.550...

9/3,KWIC/37 (Item 31 from file: 73)

DIALOG(R)File 73:EMBASE

(c) 2002 Elsevier Science B.V. All rts. reserv.

07131011 EMBASE No: 1998018042

A plastid organelle as a drug target in apicomplexan parasites

Fichera M.E.; Roos D.S.

D.S. Roos, Department of Biology, University of Pennsylvania,
Philadelphia, PA 19104-6018 United States

AUTHOR EMAIL: droos@sas.upenn.edu

Nature (NATURE) (United Kingdom) 1997, 390/6658 (407-409)

CODEN: NATUA ISSN: 0028-0836

DOCUMENT TYPE: Journal; Article

LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

NUMBER OF REFERENCES: 30

A plastid organelle as a drug target in apicomplexan parasites

...of poultry and cattle). Recent studies have identified an unusual
organelle in these parasites: a **plastid** that appears to have been
acquired by secondary endo- symbiosis of a green alga. Here we show that
replication of the apicomplexan **plastid** (apicoplast) genome in *Toxoplasma*
gondii tachyzoites can be specifically inhibited using ciprofloxacin, and
that this...

...to target protein synthesis in the apicoplast. Conversely, clindamycin
(and functionally related compounds) immediately inhibits **plastid**
replication upon drug application - the earliest effect so far described
for these antibiotics. Our results...

MEDICAL DESCRIPTORS:

plastid ; drug targeting; plasmodium; toxoplasma; acquired immune
deficiency syndrome; opportunistic infection; genome; nonhuman; controlled
study; article...

EMTREE CODES:

B1.50; A11.190.160; E5.685.340; G1.680.670.340; **B1.50.70.60** ; B1.50.70.85;
C3.445.430.150.30; C6.440.935...

9/3,KWIC/38 (Item 32 from file: 73)
DIALOG(R)File 73:EMBASE
(c) 2002 Elsevier Science B.V. All rts. reserv.

07049152 EMBASE No: 1997330996

**Partial nucleotide sequence and organisation of extrachromosomal plastid
-like DNA in Plasmodium berghei**

Yap M.W.C.; Kara U.A.K.; Ten Heggeler-Bordier B.; Ting R.C.Y.; Tan T.M.C.
U.A.K. Kara, Molecular Parasitology Laboratory, School of Biological
Sciences, 10 Kent Ridge Crescent, Singapore 119260 Singapore

AUTHOR EMAIL: sbsauk@leonis.nus.sg

Gene (GENE) (Netherlands) 1997, 200/1-2 (91-98)

CODEN: GENED ISSN: 0378-1119

PUBLISHER ITEM IDENTIFIER: S0378111997003855

DOCUMENT TYPE: Journal; Article

LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

NUMBER OF REFERENCES: 23

**Partial nucleotide sequence and organisation of extrachromosomal plastid
-like DNA in Plasmodium berghei**

The murine malaria parasite *Plasmodium berghei* contains a **plastid** -like extrachromosomal genome. This genome is 30.7 kb in size and is transcriptionally active...

MEDICAL DESCRIPTORS:

* **plasmodium berghei** ; * **plastid**

EMTREE CODES:

B1.50.70.60 ; A11.190.160; J1.100; E8.150.50; E8.340.340; G3...

9/3,KWIC/39 (Item 33 from file: 73)
DIALOG(R)File 73:EMBASE
(c) 2002 Elsevier Science B.V. All rts. reserv.

07034155 EMBASE No: 1997314523

**Direct PCR amplification and sequence analysis of extrachromosomal
Plasmodium DNA from dried blood spots**

Tan T.M.C.; Nelson J.S.; Ng H.C.; Ting R.C.Y.; Kara U.A.K.

U.A.K. Kara, Molecular Parasitology Laboratory, School of Biological
Sciences, National University of Singapore, 10 Kent Ridge Crescent,
S-119260, Singapore Singapore

AUTHOR EMAIL: sbsauk@leonis.nus.sg

Acta Tropica (ACTA TROP.) (Netherlands) 1997, 68/1 (105-114)

CODEN: ACTRA ISSN: 0001-706X

PUBLISHER ITEM IDENTIFIER: S0001706X97000806

DOCUMENT TYPE: Journal; Article

LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

NUMBER OF REFERENCES: 9

The *Plasmodium* parasite possesses two extrachromosomal genomes; the mitochondrial genetic element and the extrachromosomal **plastid** -like DNA. The latter has only been fully described for one culture strain of *P. falciparum*. In this study, a rapid procedure for amplifying **plastid** DNA from dried blood spots of blood infected with different malaria species was developed. PCR amplification of a 595 bp fragment within the **plastid** -like large subunit ribosomal-RNA (LSU-rRNA) gene was achieved using primers derived from the...

...species examined. Sequence analysis of amplified products homologous to an LSU-rRNA fragment of the **plastid** -like extrachromosomal circle revealed extensive conservation between *Plasmodium* species including *P. falciparum*, *P. vivax*, *P. ...*

EMTREE CODES:

...540.340; E1.280; B2.60.60.60.10.40; J2.20.10; J2.20; B1.50.70.60 ;
E1.50.150.630; G3.560.560.300; E5.790; E5.345...

9/3,KWIC/40 (Item 34 from file: 73)
DIALOG(R)File 73:EMBASE

(c) 2002 Elsevier Science B.V. All rts. reserv.

07016761 EMBASE No: 1997304427

Continuous culture of Plasmodium falciparum: Its impact on malaria research

Trager W.; Jensen J.B.

W. Trager, Rockefeller University, New York, Ny 10021 United States
International Journal for Parasitology (INT. J. PARASITOL.) (United Kingdom) 1997, 27/9 (989-1006)

CODEN: IJPYB ISSN: 0020-7519

PUBLISHER ITEM IDENTIFIER: S0020751997000805

DOCUMENT TYPE: Journal; Review

LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

NUMBER OF REFERENCES: 148

...development; pathogenesis; export of proteins into the host cell; cell, biology, the mitochondrion and the **plastid**; innate resistance involving mutant human erythrocytes; gametocytogenesis; genetics; transfection; molecular biology; biochemistry; extracellular cultivation.

EMTREE CODES:

...680.670.330.230; G1.705.700.220; E2.230; C1.275; Q12.70.50; **B1.50.70.60**; Q1.95; Q2.150.95; E2.230.150; E1.195; G3.560...

9/3,KWIC/41 (Item 35 from file: 73)

DIALOG(R)File 73:EMBASE

(c) 2002 Elsevier Science B.V. All rts. reserv.

06954047 EMBASE No: 1997238615

Interaction of thiostrepton with an RNA fragment derived from the plastid -encoded ribosomal RNA of the malaria parasite

Rogers M.J.; Bukhman Y.V.; McCutchan T.F.; Draper D.E.

T.F. McCutchan, Growth and Development Section, Lab. of Parasitic Diseases, NIAID, Bethesda, MD 20892-0425 United States

AUTHOR EMAIL: mcutchan@helix.nih.gov

RNA (RNA) (United States) 1997, 3/8 (815-820)

CODEN: RNARF ISSN: 1355-8382

DOCUMENT TYPE: Journal; Article

LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

NUMBER OF REFERENCES: 39

Interaction of thiostrepton with an RNA fragment derived from the plastid -encoded ribosomal RNA of the malaria parasite

...inhibited by the drug. The proposed target in R falciparum is the ribosome of the **plastid** - like organelle (35 kb circular genome) of unknown function. Positive identification of the drug target...

...that the organelle is essential for blood-stage development of Plasmodium and help clarify the **plastid** 's biological role. The action of thiostrepton as an antibiotic relates to its affinity for...

...mutations within the Escherichia coil domain abrogates thiostrepton binding, extensive sequence differences between eubacterial and **plastid** domains brings into question the site of drug action. We have examined temperature- dependent hyperchromicity profiles of synthetic RNAs corresponding to domains in the **plastid** and cytoplasmic RNAs of P. falciparum. Thiostrepton induces a tertiary structure in the **plastid** -like fragment similar to that seen in eubacterial rRNA, even though the two share only about 60% sequence identity. A single point mutation in the **plastid** -like fragment removes thiostrepton- dependent tertiary structure formation. Thus, the **plastid** and eubacterial RNAs share a stabilized tertiary structure induced by the drug. This direct indicator of drug sensitivity in eubacteria suggests that the **plastid** - encoded ribosome is similarly sensitive to thiostrepton and that the **plastid** is the site of drug action. Correlation of thiostrepton-sensitive and - resistant phenotypes with physical parameters suggests thiostrepton resistance as a selectable marker for **plastid** transformation.

MEDICAL DESCRIPTORS:

antibiotic sensitivity; article; binding site; cell organelle; drug binding
; growth inhibition; phenotype; plasmodium falciparum; **plastid**; point
mutation; priority journal; protein localization; protein stability;
protein synthesis; protein tertiary structure; rna analysis...
EMTREE CODES:
G1.680.220.220; G3.880.90.225; **B1.50.70.60** ; G1.560.90.20;
G1.680.670.330.240.20; G1.705...

9/3,KWIC/42 (Item 36 from file: 73)
DIALOG(R)File 73:EMBASE
(c) 2002 Elsevier Science B.V. All rts. reserv.

06923135 EMBASE No: 1997207605
Extrachromosomal DNA - In the apicomplexa
Wilson R.J.M.; Williamson D.H.
R.J.M. Wilson, Natl. Institute for Medical Research, Mill Hill, London
NW7 1AA United Kingdom
AUTHOR EMAIL: r-wilson@nimr.mrc.ac.uk
Microbiology and Molecular Biology Reviews (MICROBIOL. MOL. BIOL. REV.)
(United States) 1997, 61/1 (1-16)
CODEN: MMBRF ISSN: 1092-2172
DOCUMENT TYPE: Journal; Review
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH
NUMBER OF REFERENCES: 127

Malaria and related apicomplexan parasites have two highly conserved
organellar genomes: one is of **plastid** (pl) origin, and the other is
mitochondrial (mt). The organization of both organellar DNA molecules...

...be tightly packed with genes. The 35-kb circular DNA is the smallest
known vestigial **plastid** genome and is presumed to be functional. All but
two of its recognized genes are...

...chaperones, and the other encodes a conserved protein of unknown
function found both in algal **plastids** and in eubacterial genomes. The
possible evolutionary source and intracellular location of the plDNA are...

MEDICAL DESCRIPTORS:

babesia; dna replication; dna sequence; gene expression; genome; nonhuman;
plasmodium; **plastid**; review; theileria; toxoplasma

EMTREE CODES:

...340; G3.560.630.650.210; G3.560.560.320; G1.385.350; J2.20; **B1.50.70.60**
; A11.190.160; J1; B1.50.70.80; B1.50.70.85...

9/3,KWIC/43 (Item 37 from file: 73)
DIALOG(R)File 73:EMBASE
(c) 2002 Elsevier Science B.V. All rts. reserv.

06827653 EMBASE No: 1997110152
Thiostrepton binds to malarial plastid rRNA
Clough B.; Strath M.; Preiser P.; Denny P.; Wilson I.
B. Clough, National Inst. for Medical Research, Mill Hill, London NW7 1AA
United Kingdom
FEBS Letters (FEBS LETT.) (Netherlands) 1997, 406/1-2 (123-125)
CODEN: FEBLA ISSN: 0014-5793
PUBLISHER ITEM IDENTIFIER: S001457939700241X
DOCUMENT TYPE: Journal; Article
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH
NUMBER OF REFERENCES: 14

Thiostrepton binds to malarial plastid rRNA

...A1067 (E. coli). Small RNA transcripts were prepared corresponding to
the GTPase domain of the **plastid** 23S rRNA and the two forms of cytosolic
28S rRNAs found in the human malaria parasite Plasmodium falciparum, as
well as the **plastid** form of rRNA of the AIDS-related pathogen Toxoplasma
gondii. Binding affinities of the wild type and mutated RNA sequences were
as predicted; the malarial **plastid** sequence had by far the highest
affinity, whereas that from toxoplasma did not bind thiostrepton.

EMTREE CODES:

...G1.385.550.90.690; G1.560.90.55.690; G3.560.560.85.690; **B1.50.70.60** ;
J1; G3.560.630.650.750; E8.340.340; D4.680.265...

9/3,KWIC/44 (Item 38 from file: 73)

DIALOG(R)File 73:EMBASE

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06796736 EMBASE No: 1997078239

A plastid of probable green algal origin in Apicomplexan parasites

Kohler S.; Delwiche C.F.; Denny P.W.; Tilney L.G.; Webster P.; Wilson R.J.M.; Palmer J.D.; Ross D.S.

D.S. Ross, Department of Biology, University of Pennsylvania,
Philadelphia, PA 19104 United States

AUTHOR EMAIL: droos@sas.upenn.edu

Science (SCIENCE) (United States) 1997, 275/5305 (1485-1489)

CODEN: SCIEA ISSN: 0036-8075

DOCUMENT TYPE: Journal; Article

LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

NUMBER OF REFERENCES: 33

A plastid of probable green algal origin in Apicomplexan parasites

...Eimeria tenella and the malaria parasite Plasmodium falciparum grouped this organellars genome with cyanobacteria and **plastids** , showing consistent clustering with green algal **plastids** . Taken together, these observations indicate that the Apicomplexa acquired a **plastid** by secondary endosymbiosis, probably from a green alga.

MEDICAL DESCRIPTORS:

*green alga; * **plastid**

EMTREE CODES:

B5.20.10.10; A11.190.160; J1.100; B1.50.70.35; J2.20; **B1.50.70.60** ; J1;
G1.840; B1.50.70.85; D4.635.630.25; G3...

9/3,KWIC/45 (Item 39 from file: 73)

DIALOG(R)File 73:EMBASE

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06762456 EMBASE No: 1997043945

The growing importance of the plastid -like DNA of the Apicomplexa

Jeffries A.C.; Johnson A.M.

A.M. Johnson, Molecular Parasitology Unit, Department of Cell/Molecular Biology, University of Technology Sydney, Westbourne Street, Gore Hill, NSW 2065 Australia

AUTHOR EMAIL: a.johnson@uts.edu.au

International Journal for Parasitology (INT. J. PARASITOL.) (United Kingdom) 1996, 26/11 (1139-1150)

CODEN: IJPYB ISSN: 0020-7519

PUBLISHER ITEM IDENTIFIER: S0020751996000987

DOCUMENT TYPE: Journal; Review

LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

NUMBER OF REFERENCES: 77

The growing importance of the plastid -like DNA of the Apicomplexa

...their mitochondrial genome, an extrachromosomal DNA that possesses significant similarities with the extrachromosomal genomes of **plastids** . To date, the majority of data on these **plastid** -like DNAs have been obtained from the human malarial organism, Plasmodium falciparum. In common with **plastid** DNAs, the **plastid** -like DNA of P. falciparum possesses genes for DNA-dependent RNA polymerase subunits beta and...

...polymerase subunit and ribosomal RNA gene sequences share a number of features with those from **plastid** DNAs. In addition, the ribosomal RNA genes are organised in an inverted repeat arrangement, reminiscent of **plastid** DNAs. Additional molecular features shared between the 2 genomes are discussed. **Plastid** -like DNAs have also been identified in other

Plasmodium species as well as Toxoplasma gondii...

- ...cryptic organelle often observed in apicomplexans has been proposed as the organelle that harbours the **plastid** -like DNAs, but conclusive evidence for this has not yet been obtained. Although approximately 1/4 of the **plastid** -like DNA of P. falciparum has been sequenced to date, no function has yet been...

...DNA have indicated an evolutionary origin from photosynthetic organisms, but the true provenance of the **plastid** -like DNAs remains to be determined. Because of the specific nature of the **plastid** -like DNAs, they may prove useful as effective targets for chemotherapeutics.

MEDICAL DESCRIPTORS:

*apicomplexa; *evolution; *plasmodium falciparum; * **plastid** ; *toxoplasma gondii

EMTREE CODES:

B1.50; G1.280; **B1.50.70.60** ; A11.190.160; B1.50.70.85; B1.50.70.10; E8...

9/3,KWIC/46 (Item 40 from file: 73)

DIALOG(R)File 73:EMBASE

(c) 2002 Elsevier Science B.V. All rts. reserv.

06758818 EMBASE No: 1997040305

Inhibition of Plasmodium falciparum protein synthesis. Targeting the plastid -like organelle with thiostrepton

McConkey G.A.; Rogers M.J.; McCutchan T.F.

T.F. McCutchan, Laboratory of Parasitic Diseases, NIAID, National Institutes of Health, Bethesda, MD 20892-0425 United States

AUTHOR EMAIL: mcutchan@helix.nih.gov

Journal of Biological Chemistry (J. BIOL. CHEM.) (United States) 1997, 272/4 (2046-2049)

CODEN: JBCHA ISSN: 0021-9258

DOCUMENT TYPE: Journal; Article

LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

NUMBER OF REFERENCES: 45

Inhibition of Plasmodium falciparum protein synthesis. Targeting the plastid -like organelle with thiostrepton

...the P. falciparum rRNAs indicates that only the large subunit (LSU) rRNA encoded by the **plastid** -like genome is the target for thiostrepton. Indeed we find that thiostrepton inhibits growth of...

...effects on total protein synthesis. We have further examined selective effects of thiostrepton on the **plastid** function by comparing differential effects of the drug on cytoplasmic and organellar encoded transcripts. Treatment...

...on organelle function that is suggestive of interference in the protein synthesis apparatus of the **plastid** . Sensitivity of P. falciparum to thiostrepton confirms that the **plastid** -like genome is essential for the erythrocytic cycle and presents a novel therapeutic site for...

MEDICAL DESCRIPTORS:

article; molecular interaction; nonhuman; plasmodium falciparum; **plastid** ; priority journal; rna analysis

EMTREE CODES:

...710; G1.550.95.710; G3.560.700.720; J1.100; H1.145; J2.20; **B1.50.70.60** ; A11.190.160; J1; E1.50.150.630; D4.680.550; D4...

9/3,KWIC/47 (Item 41 from file: 73)

DIALOG(R)File 73:EMBASE

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06589564 EMBASE No: 1996254208

Complete gene map of the plastid -like DNA of the malaria parasite Plasmodium falciparum

Wilson R.J.M.I.; Denny P.W.; Preiser P.R.; Rangachari K.; Roberts K.; Roy A.; Whyte A.; Strath N.; Moore D.J.; Moore P.W.; Williamson D.H.

National Institute Medical Research, Mill Hill, London NW7 1AA United Kingdom

Journal of Molecular Biology (J. MOL. BIOL.) (United Kingdom) 1996, 261/2 (155-172)

CODEN: JMOBA ISSN: 0022-2836

DOCUMENT TYPE: Journal; Article

LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

Complete gene map of the plastid -like DNA of the malaria parasite Plasmodium falciparum

Malaria parasites, and other parasitic protists of the Phylum Apicomplexa, carry a **plastid** -like genome with greatly reduced sequence complexity. This 35 kb DNA circle resembles the **plastid** DNA of non-photosynthetic plants, encoding almost exclusively components involved in gene expression. The complete...

...chaperones, as well as an open reading frame of unknown function found in red algal **plastids**. Transcription is polycistronic. This **plastid** -like DNA molecule is conserved in several genera of apicomplexans and is conjectured to have...

...by an early progenitor of the Phylum by secondary endosymbiosis. The function of the organelle (**plastid**) carrying this DNA remains obscure, but appears to be specified by genes transferred to the...

MEDICAL DESCRIPTORS:

*gene mapping; *plasmodium falciparum; * **plastid**

EMTREE CODES:

E5.345.330; G3.560.560.350; **B1.50.70.60** ; A11.190.160; B1.50; J1.100; E1.50.150.630; E8...

9/3,KWIC/48 (Item 42 from file: 73)

DIALOG(R)File 73:EMBASE

(c) 2002 Elsevier Science B.V. All rts. reserv.

06582645 EMBASE No: 1996247255

Organelle DNAs: The bit players in malaria parasite DNA replication

Williamson D.H.; Preiser P.R.; Wilson R.J.M.

Parasitology Division, National Institute for Medical Res., Mill Hill, London NW7 1AA United Kingdom

Parasitology Today (PARASITOL. TODAY) (United Kingdom) 1996, 12/9 (357-362)

CODEN: PATOE ISSN: 0169-4758

DOCUMENT TYPE: Journal; Review

LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

...The parasite's second extrachromosomal DNA, a 35 kb circular molecule thought to be a **plastid** remnant inherited from a remote photoautotroph, probably replicates in a more familiar fashion from conventional...

MEDICAL DESCRIPTORS:

apicomplexa; bacteriophage; evolution; genetic recombination; genome; mitochondrion; nonhuman; **plasmodium berghei** ; plasmodium falciparum; plasmodium gallinaceum; plasmodium knowlesi; **plastid** ; review

EMTREE CODES:

...210; G3.560.630.600.210.20.20; G3.560.630.600.630.20.20; **B1.50.70.60** ; B1.50; B4.10; G1.280; G3.560.560.440; G1.385...

9/3,KWIC/49 (Item 43 from file: 73)

DIALOG(R)File 73:EMBASE

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06317642 EMBASE No: 1995355109

tRNA genes transcribed from the plastid -like DNA of Plasmodium falciparum

Preiser P.; Williamson D.H.; Wilson R.J.M.

Division of Parasitology, National Institute Medical Research, The Ridgeway, Mill Hill, London NW7 1AA United Kingdom

Nucleic Acids Research (NUCLEIC ACIDS RES.) (United Kingdom) 1995,

23/21 (4329-4336)
CODEN: NARHA ISSN: 0305-1048
DOCUMENT TYPE: Journal; Article
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

tRNA genes transcribed from the plastid -like DNA of Plasmodium falciparum

...second organellar DNA. This 35 kb circular molecule has a number of features reminiscent of **plastid** DNAs. Sequence analysis shows that along with other genes the circle codes for 25 different...

MEDICAL DESCRIPTORS:

anticodon; article; codon usage; dna sequence; intron; nonhuman; plasmodium falciparum; **plastid** ; priority journal

EMTREE CODES:

...50; E8.340.340; G3.560.630.650.210; G3.560.560.390; J2.20; **B1.50.70.60** ; A11.190.160; J1; D4.635.630.25; D4.635.630.75...

9/3,KWIC/50 (Item 44 from file: 73)
DIALOG(R)File 73:EMBASE
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05863485 EMBASE No: 1994270749

Phylogenetic analysis of the rpoB gene from the plastid -like DNA of Plasmodium falciparum

Gardner M.J.; Goldman B.N.; Barnett P.; Moore P.W.; Rangachari K.; Strath M.; Whyte A.; Williamson D.H.; Wilson R.J.M.

Parasitology Division, National Institute Medical Research, Mill Hill, London NW7 1AA United Kingdom

Molecular and Biochemical Parasitology (MOL. BIOCHEM. PARASITOL.) (Netherlands) 1994, 66/2 (221-231)

CODEN: MBIPD ISSN: 0166-6851

DOCUMENT TYPE: Journal; Article

LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

Phylogenetic analysis of the rpoB gene from the plastid -like DNA of Plasmodium falciparum

...extrachromosomal DNAs. One is mitochondrial and the other is a 35-kb circle with same **plastid** -like features but whose provenance and function is unknown. In addition to genes for rRNAs...

...presented here supports our inference that the 35-kb circle is the remnant of a **plastid** genome.

EMTREE CODES:

B1.50.70.60 ; E5.280.275.60; J2.40.5; J1.100; J2.10; E1...

9/3,KWIC/51 (Item 45 from file: 73)
DIALOG(R)File 73:EMBASE
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05826156 EMBASE No: 1994227896

Nine duplicated tRNA genes on the plastid -like DNA of the malaria parasite Plasmodium falciparum

Gardner M.J.; Preiser P.; Rangachari K.; Moore D.; Feagin J.E.; Williamson D.H.; Wilson R.J.M.

Natl. Institute for Medical Research, Mill Hill, London NW7 1AA United Kingdom

Gene (GENE) (Netherlands) 1994, 144/2 (307-308)

CODEN: GENED ISSN: 0378-1119

DOCUMENT TYPE: Journal; Article

LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

Nine duplicated tRNA genes on the plastid -like DNA of the malaria parasite Plasmodium falciparum

A major feature of the **plastid** -like circular DNA of Plasmodium

falciparum is an inverted repeat comprising duplicated genes for rRNA...

MEDICAL DESCRIPTORS:

*gene duplication; * **plastid**

EMTREE CODES:

...G1.385.550.90.650; G1.560.90.55.650; G3.560.560.85.650; **B1.50.70.60** ;
J1; G3.560.630.650.210; D4.635.630.75.880; D4...

9/3,KWIC/52 (Item 46 from file: 73)

DIALOG(R)File 73:EMBASE

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05825863 EMBASE No: 1994235428

Malaria and other apicomplexans: The 'plant' connection

Wilson R.J.M.; Williamson D.H.; Preiser P.

Natl. Institute for Medical Research, Mill Hill, London NW7 1AA United Kingdom

Infectious Agents and Disease (INFECT. AGENTS DIS.) (United States)

1994, 3/1 (29-37)

CODEN: IADIE ISSN: 1056-2044

DOCUMENT TYPE: Journal; Short Survey

LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

...such as the coccidia and piroplasms. We propose that an organelle corresponding to a residual **plastid**, performing unknown functions, is likely to reside in all, or many, of these organisms. The...

MEDICAL DESCRIPTORS:

apicomplexa; cell organelle; coccidia; eukaryote; nonhuman; **plastid** ;
priority journal; short survey; toxoplasma gondii

EMTREE CODES:

C6.440.670.720; C6.440.880; C1.275; G1.550.680; **B1.50.70.60** ; B1.50;
A11.190.160; B1.50.70.13; G1.280.280...

9/3,KWIC/53 (Item 47 from file: 73)

DIALOG(R)File 73:EMBASE

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05739440 EMBASE No: 1994142641

The evolutionary origin of the 35 kb circular DNA of Plasmodium falciparum: New evidence supports a possible rhodophyte ancestry

Williamson D.H.; Gardner M.J.; Preiser P.; Moore D.J.; Rangachari K.;
Wilson R.J.M.

National Institute Medical Research, Mill Hill, London NW7 1AA United Kingdom

Molecular and General Genetics (MOL. GEN. GENET.) (Germany) 1994,
243/2 (249-252)

CODEN: MGGEA ISSN: 0026-8925

DOCUMENT TYPE: Journal; Article

LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

...its genetic content makes a mitochondrial association unlikely and the molecule has features reminiscent of **plastid** genomes. We now report the occurrence on the circle of an open reading frame specifying...

...plastome of red algae. This high degree of conservation confirms the 35 kb circle's **plastid** ancestry, and we speculate that it may have originated from the rhodoplast of an ancient...

MEDICAL DESCRIPTORS:

*amino acid sequence; *evolution; *malaria--etiology--et; * **plastid** ; *
sequence homology

EMTREE CODES:

...275; A11.190.160; G3.560.560; B5.20.10.10; J1.100; J2.20; **B1.50.70.60** ;
J1; D4.635.630.25; G3.560.630.650.210; D4.270

9/3,KWIC/54 (Item 48 from file: 73)

DIALOG(R)File 73:EMBASE

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05630977 EMBASE No: 1994016640
Plastids **better red than dead** (5)
Wilson I.
National Inst. for Medical Research, Mill Hill, London NW7 1AA United Kingdom
Nature (NATURE) (United Kingdom) 1993, 366/6456 (638)
CODEN: NATUA ISSN: 0028-0836
DOCUMENT TYPE: Journal; Letter
LANGUAGE: ENGLISH

Plastids **better red than dead** (5)
MEDICAL DESCRIPTORS:
*plasmodium; * **plastid**
EMTREE CODES:
B1.50.70.60 ; A11.190.160; J1; J2.20

9/3, KWIC/55 (Item 49 from file: 73)
DIALOG(R) File 73: EMBASE
(c) 2002 Elsevier Science B.V. All rts. reserv.

05387513 EMBASE No: 1993155612
Sequence and organization of large subunit rRNA genes from the extrachromosomal 35 kb circular DNA of the malaria parasite Plasmodium falciparum
Gardner M.J.; Feagin J.E.; Moore D.J.; Rangachari K.; Williamson D.H.; Wilson R.J.M.
National Inst for Medical Research, Mill Hill, London NW7 2AB United Kingdom
Nucleic Acids Research (NUCLEIC ACIDS RES.) (United Kingdom) 1993, 21/5 (1067-1071)
CODEN: NARHA ISSN: 0305-1048
DOCUMENT TYPE: Journal; Article
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

...ca. 10.5 kb. The palindrome has an intriguing resemblance to the inverted repeat of **plastid** genomes, and the sequence and putative secondary structure of the malarial large subunit (LSU) rRNA...
EMTREE CODES:
...280; G3.560.560.390; G1.385; A11.190.160.560; J2.20; G1.280;
B1.50.70.60 ; J1; A11.190.160.750; G3.560.630.650.750; D4.635...

9/3, KWIC/56 (Item 50 from file: 73)
DIALOG(R) File 73: EMBASE
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05337096 EMBASE No: 1993105181
Identification of a Babesia bovis gene with homology to the small subunit ribosomal RNA gene from the 35-kilobase circular DNA of Plasmodium falciparum
Gozar M.M.G.; Bagnara A.S.
Sch. Biochemistry/Molecular Genetics, University of New South Wales, P.O. Box 1, Kensington, NSW 2033 Australia
International Journal for Parasitology (INT. J. PARASITOL.) (United Kingdom) 1993, 23/1 (145-148)
CODEN: IJPYB ISSN: 0020-7519
DOCUMENT TYPE: Journal; Conference Paper
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

...with the organellar SSrRNA gene from P. falciparum and up to 65% identity with the **plastid** SSrRNA gene sequences from various other organisms. We conclude that the 552 bp fragment amplified...
EMTREE CODES:
B1.50.70.10; B1.50.70.60 ; G3.560.560; J1.200; E1.50.345; J2.20; E1.50...

9/3, KWIC/57 (Item 51 from file: 73)

DIALOG(R)File 73:EMBASE
(c) 2002 Elsevier Science B.V. All rts. reserv.

05181570 EMBASE No: 1992321804

Plastid origin of an extrachromosomal DNA molecule from Plasmodium, the causative agent of malaria

Howe C.J.

Department of Biochemistry, University of Cambridge, Tennis Court
Road, Cambridge CB2 1QW United Kingdom

Journal of Theoretical Biology (J. THEOR. BIOL.) (United Kingdom) 1992
158/2 (199-205)

CODEN: JTBIA ISSN: 0022-5193

DOCUMENT TYPE: Journal; Article

LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

Plastid origin of an extrachromosomal DNA molecule from Plasmodium, the causative agent of malaria

...molecule is in fact derived from an oxygenic photosynthetic organism and should be regarded as **plastid** DNA. This suggests that Plasmodium originated from a phototroph that has lost the capacity to...

EMTREE CODES:

C6.440.670.720; C6.440.880; C1.275; **B1.50.70.60** ; J1.100; E5.175.175;
J2.20; G1.550.680; G1.280...

9/3,KWIC/58 (Item 52 from file: 73)

DIALOG(R)File 73:EMBASE

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04737081 EMBASE No: 1991230435

Organisation and expression of small subunit ribosomal RNA genes encoded by a 35-kilobase circular DNA in Plasmodium falciparum

Gardner M.J.; Feagin J.E.; Moore D.J.; Spencer D.F.; Gray M.W.;
Williamson D.H.; Wilson R.J.M.

Division of Parasitology, National Institute for, Medical Research, Mill
Hill, London NW7 1AA United Kingdom

Molecular and Biochemical Parasitology (MOL. BIOCHEM. PARASITOL.) (Netherlands) 1991, 48/1 (77-88)

CODEN: MBIPD ISSN: 0166-6851

DOCUMENT TYPE: Journal; Article

LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

...small subunit rRNA gene are similar to mitochondrial sequences, others are more like those of **plastids**. The origin of the circular DNA molecule and evolutionary implications of its genetic content are...

EMTREE CODES:

G3.560.560.390; **B1.50.70.60** ; A11.190.160.750; E1.50.150.710;
E8.150.150.710...

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\$0.03 Estimated cost File5

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\$0.09 Estimated cost File34

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\$0.03 Estimated cost File48

\$0.02 0.005 DialUnits File65

\$0.02 Estimated cost File65

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\$0.04 Estimated cost File71

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$0.02      Estimated cost File370
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OneSearch, 28 files, 0.442 DialUnits FileOS
$0.21      TELNET
$66.43     Estimated cost this search
$66.43     Estimated total session cost    0.442 DialUnits

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Status: Signed Off. (1 minutes)

WEST

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L10: Entry 3 of 6

File: USPT

DOCUMENT-IDENTIFIER: US 6100251 A
TITLE: Chromium polynicotinate compositions

Detailed Description Text (11):

The oral formulations described above may also include aspirin (acetylsalicylic acid), other salicylates, or another NSAID such as indomethacin, ibuprofen, acetaminophen, naproxen or any drug capable of inhibiting the cyclooxygenase pathway leading to prostaglandin synthesis. This results in a decrease in intestinal mucus production and lower intestinal pH which facilitates absorption of the chromic tripicolinate compositions of the present invention. The oral compositions may further include mucolytics such as guaifenesin and the like, to inhibit intestinal mucus production, and/or acids such as ascorbic acid, citric acid and the like to lower intestinal pH. Inclusion of one or both of these compounds further enhances chromium absorption. There are two forms of cyclooxygenase (cox), cox1 and cox2, which differ in their sensitivity to inhibition by NSAIDs. The cox2 isozyme promotes prostaglandin formation at sites of inflammation, but not at other sites such as the gastrointestinal tract. In contrast, relatively selective inhibition of cox1 facilitates chromic tripicolinate and chromic polynicotinate absorption. Although the selective inhibition of cox1 is desirable, any inhibitor or cox1 or cox2 can be formulated with the chromic tripicolinate and chromic polynicotinate compositions of the invention. Cox inhibitors, acids and mucolytics may also be coadministered with the chromic tripicolinate and chromic polynicotinate compositions of the invention. The amount of these drugs formulated with or coadministered with the chromic tripicolinate compositions of the invention are as follows: cox inhibitors, between about 50 mg and 500 mg; mucolytics, between about 10 mg and 250 mg; and acids, between about 50 mg and about 1,000 mg.

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L11: Entry 1 of 1

File: USPT

DOCUMENT-IDENTIFIER: US 6217877 B1

TITLE: Pharmaceutical compositions containing parthenium integrifolium or parts thereof or an extract or component thereof, the use of such plant material for preparing certain medicines, and a method of preparing an extract of parthenium integrifolium

Brief Summary Text (7):

At present the nonsteroidal antiinflammatory drugs (NSAIDS) are the most commonly applied therapeutic agents for the treatment of conditions associated with inflammation and pain. The NSAIDs exert their action by inhibiting the prostaglandin-generating enzyme cyclooxygenase (COX). There are two biochemical subtypes of cyclooxygenase denominated COX-1 and COX-2. COX-1 is constitutively expressed in most cells and is responsible for the formation of prostaglandins which mediate important basic physiological functions, e.g. providing an intact mucosa in the ventricle. COX-2 is not normally present, but may be induced by certain serum factors, cytokines and growth factors and responsible for the formation of inflammatory prostaglandins which mediate many symptoms of inflammation. The NSAIDs are generally non-selective, meaning that they inhibit both COX-2 and COX-1 resulting in an antiinflammatory and pain relieving effect due to the inhibition of COX-2 and a number of side effects due to the inhibition of COX-1, of which gastric ulceration is one of the most important.